Legislative Audit Division



State of Montana

Report to the Legislature

June 2006

Performance Audit

The Collection and Use of Graduate and Dropout Data

Office of Public Instruction

This performance audit provides the Legislature information about the collection and use of graduate and dropout data. To ensure data is consistent among schools for reporting and decision-making, this report makes recommendations for implementing controls as well as a means to utilize the data. A written response from the Office of Public Instruction is included at the end of the report.

Direct comments/inquiries to: Legislative Audit Division Room 160, State Capitol PO Box 201705 Helena MT 59620-1705

06P-11

Help eliminate fraud, waste, and abuse in state government. Call the Fraud Hotline at 1-800-222-4446 statewide or 444-4446 in Helena.

PERFORMANCE AUDITS

Performance audits conducted by the Legislative Audit Division are designed to assess state government operations. From the audit work, a determination is made as to whether agencies and programs are accomplishing their purposes, and whether they can do so with greater efficiency and economy. The audit work is conducted in accordance with audit standards set forth by the United States Government Accountability Office.

Members of the performance audit staff hold degrees in disciplines appropriate to the audit process. Areas of expertise include business and public administration, mathematics, statistics, economics, political science, criminal justice, computer science, education, and biology.

Performance audits are performed at the request of the Legislative Audit Committee which is a bicameral and bipartisan standing committee of the Montana Legislature. The committee consists of six members of the Senate and six members of the House of Representatives.

MEMBERS OF THE LEGISLATIVE AUDIT COMMITTEE

Senator Joe Balyeat, Vice Chair Senator John Brueggeman Senator Jim Elliott Senator Dan Harrington Senator Lynda Moss Senator Corey Stapleton Representative Dee Brown
Representative Hal Jacobson
Representative Christine Kaufmann
Representative Scott Mendenhall
Representative John Musgrove, Chair
Representative Janna Taylor

LEGISLATIVE AUDIT DIVISION

Scott A. Seacat, Legislative Auditor Tori Hunthausen, Chief Deputy Legislative Auditor



Deputy Legislative Auditors: James Gillett Jim Pellegrini

June 2006

The Legislative Audit Committee of the Montana State Legislature:

This performance audit provides the Legislature information about the collection and use of graduation and dropout data. To ensure data is consistent among schools for reporting and decision-making, this report makes recommendations for implementing controls as well as a means to utilize the data. A written response from the Office of Public Instruction is included at the end of the report.

We wish to express our appreciation to the Office of Public Instruction staff and local schools for their cooperation and assistance during the audit.

Respectfully submitted,

/s/ Scott A. Seacat

Scott A. Seacat Legislative Auditor

Legislative Audit Division

Performance Audit

The Collection and Use of Graduate and Dropout Data

Office of Public Instruction

Members of the audit staff involved in this audit were Bridget Butler and Angie Grove.

	List of Figures and Tables	ii
	Elected, Appointed and Administrative Officials	iii
	Report Summary	S-1
Chapter I – Introduction and	Background	1
	Introduction	1
	Audit Scope and Objectives	1
	Background	2
	State Requirements	
	Federal Requirements	
	Calculations of Graduate Data	
	Calculations of Dropout Data	
	National Attention	
	Report Organization	8
Chapter II – OPI Guidelines.		9
_	OPI Guidelines for Reporting	9
	School Visits	10
	Data Verification	
	Examples of Inconsistency	11
	Guidelines Not Fully Utilized	
	A Quality Assurance System Needed	
	Conclusion	13
	Documentation Needed for District Approved GEDs and Home	
	School Students	
	Home School Students	
	District Approved GED Recipients	14
Chapter III - OPI's Plan For	Improving Data Collection and Accuracy	15
	Initial Planning	15
	Resources Appropriated	
	Current Stage of Implementation	15
	The New System	16
	Majority of States Have a Statewide Information Management	
	System	
	Impacts of the New System	
	Human Element Still Exists	18
Chapter IV – Use of Data		19
	Data is Integral to Decision-Making	19
	National Use of Data for Economic Analysis	
	Stakeholders' Use of Data	
	Accessibility and Use of Data	
	Conclusion	22
Appendix – A		A-1

List of Figures and Tables

<u>Figures</u>		
Figure 1	Economic Benefits of Education in Montana	20
<u>Tables</u>		
Table 1	National Methods for Calculating Graduation Rates	4
Table 2	Methods for Calculating Dropout Rates	6
Table 3	Student Status Definitions	10

Elected, Appointed and Administrative Officials

Office of Public Instruction Linda McCulloch, Superintendent

Dennis "Bud" Williams, Deputy Superintendent

Nancy Coopersmith, Assistant Superintendent

Madalyn Quinlan, Chief of Staff

Donna O'Neill, Division Administrator, Measurement and Accountability Division The Legislative Audit Committee prioritized a performance audit of Montana high school graduate and dropout rates to examine the requirements associated with the calculations and their use. The overall intent was to determine the effect and cause of any deviations from established requirements. The scope of this audit focused on three main activities: the current process of compiling data on graduate and dropout students, how the implementation of a new student information management system affects the process, and how graduate and dropout data is used.

Background

Although supervision and control of schools is dispersed among different entities, the Superintendent of Public Instruction administers the majority of services to students and teachers in over 400 school districts, as well as compiles data from schools. Based on both state and federal requirements, the Office of Public Instruction (OPI)'s Division of Measurement and Accountability obtains data on student graduate and dropout numbers in the annual data collection, which schools/districts submit each fall.

Federal Requirements

The federal No Child Left Behind Act (NCLB) (PL 107-110), enacted in 2002, holds states and the schools under their jurisdictions accountable for student performance. While student achievement must be the principal indicator of performance under NCLB, statewide accountability systems are also required to incorporate one additional academic outcome. At the secondary level, this "other academic indicator" is required by NCLB to be the high school graduate rate. States are required to set goals for themselves, and then each school and district is to meet these goals through various performance indicators.

Calculations of Graduate Data

Although NCLB requires states to submit graduate data, it does not mandate how it is collected or calculated. The National Center for Education Statistics (NCES) suggests states use a Leaver-Based Graduation Rate. This definition follows groups of students throughout their four years of high school to calculate a graduation rate. Montana, along with 31 other states, currently uses this definition.

Report Summary

Calculations of Dropout Data

NCLB does not require states to directly report dropout rates. However, the annual number of dropouts is needed to calculate the graduation rate submitted annually to the federal government. Montana collects dropout data from schools for local and state analysis as well. An annual dropout rate is used in Montana. This rate is established by dividing the annual enrollment by the number of dropouts in a given year. The NCES recommends this method for calculating dropout rates. It produces the lowest rate of any method since it is only a snapshot of one year.

School Visits

To assure accuracy and consistency between schools, OPI has established the *Montana High School Completer and Dropout Data Collection Handbook*. This handbook instructs schools on how to collect/input data to OPI for graduates and dropouts, as well as provides information on calculating dropout and graduation rates. To determine if these guidelines are followed we visited 14 schools around the state to observe and interview school personnel on how they use the OPI handbook and apply student status coding procedures. We compared OPI data to documentation maintained by the schools on the number of reported student graduates, dropouts and completers. In all 14 schools visited, 100 percent of the data reviewed at the schools was consistent to that reported by OPI.

Examples of Inconsistency

We found inconsistencies in the manner in which status codes were applied to students. During our visits we inquired how a student would be coded in different scenarios; what constitutes a graduate, completer, and dropout. The responses we received indicated schools have different interpretations on how and when to apply OPI student status codes as defined in guidelines. In 9 out of 14 schools visited, we found inconsistencies in the application of student status codes. For example, some schools categorize a student passing a General Education Development (GED) test as a completer, regardless of the administering entity. OPI, in accordance with NCLB, requires students to pass a GED test through a program administered by the school district in order to be coded as a completer. In most Montana districts, this is usually done through an alternative school within the district. A student who passes a GED

test through another entity other than the school district should be coded a dropout, according to OPI guidelines.

Quality Assurance System Needed

The National Center for Educational Accountability suggests, in addition to establishing a statewide coding system for student status, it is important to provide training on how those codes should be applied. OPI does not provide on-site technical assistance for Montana schools. There are no on-site visits to assist applicable school personnel in interpreting coding requirements or communicating guideline changes/updates.

Documentation Needed for District Approved GEDs and Home School Students

There are some limitations to OPI guidelines. OPI guidelines do not require verification of home school students and GED test recipients from the district. Although OPI's handbook states a home-schooled student or a GED test recipient within the district is not a dropout, audit work showed variation on the level of confirmation schools require for a student in these categories. In order for data to be accurate, OPI must be able to distinguish between students who drop out, get a GED, or who transfer to another school or home school situation. Montana school districts already require documentation of transcripts for students transferring among other public schools; the same standard could apply to the documentation of home schooling or the entity that issued a GED test to a student.

OPI's Plan For Improving Data Collection and Accuracy

OPI began exploring the creation of a comprehensive educational reporting system in 2003. The goal was to develop an infrastructure for the educational community to gather school data via the Internet, manage the secure storage of the data, and make the data accessible to decision makers throughout the educational community. In 2004, OPI contracted with an independent consultant to survey schools on the data currently collected and the systems they use to manage data, as well as write a concept and implementation plan for a student record system. One of the most important findings of the consultant's survey was that the majority of respondent districts were more than ready to see OPI move forward and initiate data improvements.

Report Summary

Resources Appropriated

In 2005, OPI requested funds to implement the student information management system. The legislature appropriated \$2.8 million for the purpose of a new statewide K-12 education data system and approved four full time staff. Most recently, OPI assembled an evaluation team. They met on regular occasions, discussing and conducting research on similar systems and, eventually, discussing the request for proposal (RFP) for the creation and implementation of the new system.

The New System

According to planning documents, the RFP, and interviews with OPI personnel, the new system will have three main components:

- Student information, including student identifier and data elements,
- Special education data,
- ▶ An electronic data warehouse.

OPI will begin initial implementation in the fall of 2006 by assigning a student identifier to each student enrolled in public school, K-12. OPI will still collect data on the number of graduates and dropouts, but with the student identification component it will be possible to roll up the data and look at overall numbers or drill down to see the status of one particular student.

Human Element Still Exists

The implementation of the new student information system will improve OPI's current data collection and compilation system in various ways, but individuals will still decide on which status code to enter for a student. If individuals are not using student status codes consistently among schools, the new student information system will not provide comparable data.

Data is Integral to Decision-Making

Educational stakeholders in Montana agree graduate and dropout data is an integral piece of information, specifically at the state level. They consider it to be an important tool in efficient decision-making and public reporting. Educational stakeholders believe the public has a right to know the number of students graduating and have access to that data. During audit work, one stakeholder discussed the importance of looking at the bigger picture and the economic

impacts of education. The importance of paying attention to students who are at risk of dropping out was highlighted. The number of individuals in prison and on social welfare without a degree is high. Stakeholders indicated the expense on the back end of "at-risk" kids is much more than if efforts would focus on the problem while they are in school.

Accessibility and Use of Data

The OPI Division of Measurement and Accountability, which collects, compiles, and analyzes graduate and dropout data, shares data with various programs within OPI and presents annually to the Board of Public Education. Some annual reports are posted to OPI's website as well. Audit work found no formal plan for educational stakeholders and the public to access and analyze data stored in the new system. The RFP does request the system have an interactive querying tool to enable data driven decision-making by state-level education staff and policy makers. Section 10.55.603, ARM, states the assessment of educational programs and their effectiveness should be examined through assessment results as well as graduate and dropout numbers. In order to examine graduate and dropout numbers for program effectiveness, statewide data needs to be accessible. A more comprehensive system that provides various means to access data would be more effective.

Introduction

The Legislative Audit Committee prioritized a performance audit of Montana high school graduate and dropout rates to examine the requirements associated with the calculations and their use. The overall intent was to determine the effect and cause of any deviations from established requirements. For the 2004-2005 school year, the Office of Public Instruction (OPI) reported an 84.8 percent graduation rate and a 3.4 percent dropout rate. Audit work shows inconsistent procedures are used to categorize students at schools.

Audit Scope and Objectives

The scope of this audit focused on three main activities: the current process of compiling data on graduate and dropout students, how the implementation of a new student information management system affects the process, and how graduate and dropout data is used. Audit scope concentrated on graduate and dropout numbers in Montana high schools (grades 9-12) for the school year 2004-2005. Based on this scope, we established four main objectives:

- Determine if guidelines and definitions provided by OPI are designed to create consistent, accurate data on high school graduates and dropouts.
- 2. Determine if schools follow guidelines and definitions for reporting graduates and dropouts in a consistent manner.
- 3. Determine if the new student information management system will provide comparable and uniform information on graduates and dropouts among Montana public schools.
- 4. Determine if data on high school graduates and dropouts is used by educational stakeholders for the purpose of making informed decisions.

These objectives were addressed through the following methodologies:

- Review of national educational policy centers' literature on graduate and dropout data.
- Review of state and federal laws applicable to the collection of graduate and dropout numbers.
- ▶ Review of legislative/agency documents and work completed to date on the new student information system.

- ▶ Visits to 14 high schools to interview school personnel, observe data collection, and verify aggregate data from OPI.
- Review of other states' student information systems.
- Interviews with educational stakeholders (education associations, schools, and Board of Public Education) on the use and importance of graduate and dropout data.

Background

State law separates responsibilities of the public school system among three entities. The Montana Constitution provides the Board of Public Education (BPE) with responsibility for long range planning, and coordination and evaluation of policies and programs of the public school system. Article X, Section 8, of the Montana Constitution vests the supervision and control of the schools in each district to an elected local board of trustees. Section 20-3-106, MCA, provides the Superintendent of Public Instruction with general supervision of public schools and districts of the state. Although supervision and control of schools is dispersed among different entities, the Superintendent of Public Instruction, administers the majority of services to students and teachers in over 400 school districts, as well as compiles data from schools. Based on both state and federal requirements, OPI's Division of Measurement and Accountability obtains data on student dropout and graduate numbers in the annual data collection (ADC), which schools/districts submit each fall.

State Requirements

Section 10-55-603, ARM, established by the BPE, requires schools to "examine program effectiveness through graduation and dropout rates..." As a means to implement this rule, schools construct a five-year Comprehensive Education Plan which outlines goals for continuous educational improvements. Each district reports on its progress toward these goals annually in the ADC.

Federal Requirements

The federal No Child Left Behind Act (NCLB) (PL 107-110), enacted in 2002, holds states and the schools under their jurisdictions accountable for student performance. While student achievement must be the principal indicator of performance under NCLB, statewide accountability systems are also required to incorporate one additional academic outcome. At the secondary level, this "other

academic indicator" is required by NCLB to be the high school graduation rate. States are required to set goals for themselves, and then each school and district is to meet these goals through various performance indicators. If a school does not meet the set graduation rate requirement, the district can incur fiscal sanctions under NCLB. Title I of NCLB provides funds to help improve instruction in high poverty schools and ensure poor and minority students have the same opportunity as other students to meet academic standards. Schools that consistently fail to meet these NCLB accountability requirements may be required to use Title I monies to fund supplemental education services, pay transportation costs for a student to attend another school within their district, and/or develop a restructuring plan.

Calculations of Graduate Data

Although NCLB requires states to submit graduate data, it does not mandate how it is collected or calculated. The National Center for Education Statistics (NCES) suggests states use a Leaver-Based Graduation Rate. This definition follows groups of students throughout their four years of high school to calculate a graduation rate. Montana, along with 31 other states, currently uses this definition. Other common graduation rates used nationally are detailed in Table 1.

Table 1
National Methods for Calculating Graduation Rates

Rate	Methodology	Considerations
Leaver-Based Graduation Rate	Calculated by dividing number of high school diploma recipients by number of students known to leave school by dropping out, graduating or otherwise completing high school.	 Requires dropout data from four consecutive academic years, as well as number of graduates for the latest year Relies on accuracy of dropout data Does not use enrollment
Enrollment-Based Cumulative Promotion Index	This method assumes graduation is a process of three grade-to-grade transitions (9 to 10, 10 to 11, and 11 to 12). Each transition is calculated as a probability by dividing the enrollment of the later year by the enrollment of the previous year. These separate probabilities are then multiplied to produce the probability that a student will graduate.	 Requires enrollment data from two consecutive academic years, as well as number of graduates for the latest year Requires calculation of district-level rates to determine the state rate Does not use dropout data
Enrollment-Based Cohort Graduation Rate	Calculated by dividing the number of students who receive a regular high school diploma by the number of students enrolled in ninth grade four years earlier.	 Requires enrollment data from five consecutive academic years, as well as number of graduates for the latest year Requires census population data Does not use dropout data

Source: Data compiled by Standard and Poor's School Evaluation Services.

Calculations of Dropout Data

NCLB does not require states to directly report dropout rates. However, the annual number of dropouts is needed to calculate the graduation rate submitted annually to the federal government. Montana collects dropout data from schools for local and state analysis as well. An annual dropout rate is used in Montana. This rate is established by dividing the number of dropouts by the number enrolled in a given year. The NCES recommends this method for calculating dropout rates. It produces the lowest rate of any method since it is only a snapshot of one year.

There are three main methods used by states to calculate dropout rates.

Table 2
Methods for Calculating Dropout Rates

	Annual Dropout Rate	Longitudinal Dropout Rate	Attrition Rate
Description	Measures the percentage of students who drop out of school during one year.	Measures the percentage of students from a class of 9 th graders who drop out before completing high school.	Estimates the percentage of students from a class of 9th graders not enrolled in grade 12 four years later for whatever reason.
Calculation	Divide the number of students who drop out during a school year by the total number enrolled that year.	Divide the number of students who drop out by the end of grade 12, by the total number of students in the original 9 th grade class. Students who transfer in or out over the years are added or subtracted.	Subtract grade 12 enrollment from grade 9 enrollment four years prior then divide by the grade 9 enrollment.
Advantages	 Measures annual performance Requires only one year of data Can be calculated for any school or district with students in any of the grades covered Can be disaggregated 	 More consistent with the publics' understanding of a dropout rate Districts have more time to encourage dropouts to return to school before being held accountable 	Provides a simple measure of school leavers when aggregate enrollmen numbers are all that is available
Disadvantages	Produces the lowest rate of any method May not correspond	Requires multiple years of dataDoes not produce a	Produces the highest rate of any methodDoes not distinguish
	to the public's understanding of a dropout rate	 Does not produce a dropout rate by grade Program improvements may not be reflected for several years 	attrition resulting from dropping out from that resulting from transfers, retentions, death, etc.
School example (Grades 9-12)	2.2%	8.5%	36.6%

Source: Compiled by the Legislative Audit Division.

The table defines and discusses the advantages and disadvantages of each rate. The bottom row of the table depicts a dropout rate for the same school, same year, for each calculation. It shows the differences produced among the methods.

Recent national studies comparing state graduation rates found different methods produce different results and in some cases the disparities can be quite large. More specifically, national research suggests that approaches for calculating graduation rates based on dropout data produce inflated graduation estimates compared with other methods. This is due to the reliance on the accuracy of dropout data, and not using enrollment data as a basis but rather diploma recipients. Currently, state accountability plans submitted for NCLB, use graduation rates that incorporate dropout data in more than half of all states (including Montana). Changes and improvements in Montana's methods are discussed in Chapters III and IV.

National Attention

The calculation of graduation and dropout rates has received national attention due to the high standards set by NCLB's accountability requirements. Through audit work, various states have discovered inaccuracies in their calculation of graduates and dropouts. The following illustrates some examples:

- ▶ A Texas audit of 16 Houston schools found that more than half of the 5,500 students who left in the 2000-2001 school year should have been declared dropouts, but were not. That year, Houston schools reported that only 1.5 percent of its students dropped out.
- ▶ A 2001 Michigan audit of the educational accountability program found the education department did not have an effective process for gathering data, and that calculations used for graduate and dropout rates were not in accordance with state statutes.

The national attention on misreporting of graduate and dropout numbers spurred educational policy groups, including a National Governors Association Task Force, to recommend the creation and establishment of better systems and methods of collecting, analyzing, and reporting graduate and dropout data, which includes looking at longitudinal data for both groups. The difficult part of this task is accurately accounting for students who do not finish, and distinguishing between those who should be counted as dropouts and those who should not. In order to calculate precise graduation rates,

states need integrated information systems that can tell if a student who stopped attending one high school shows up in another school.

Report Organization

The next chapter will outline how OPI currently collects and guides schools on graduate and dropout data. Chapter III details OPI's current plans for improving data collection, and the last chapter discusses the importance of using dropout and graduate data for decision-making.

Chapter II – OPI Guidelines

OPI Guidelines for Reporting

The Office of Public Instruction (OPI) is required to submit Montana graduation rates annually to the federal government for No Child Left Behind (NCLB) requirements. To assure accuracy and consistency between schools, OPI has established the *Montana High School Completer and Dropout Data Collection Handbook*. These guidelines were developed in the early 1990's, and are continually updated, taking language directly from the National Center on Education Statistics. These guidelines outline definitions for dropouts, graduates, completers, and no shows. This handbook instructs schools how to collect/input data to OPI for graduates and dropouts, as well as provides information on calculating dropout and graduation rates. OPI personnel calculate these percentages. Listed in the following table are brief definitions for the six OPI-defined categories of Montana student status.

Table 3
Student Status Definitions

Student Status	Definition
Graduate	A student who completed the high school graduation requirements of a school district in four years or less, or had a special education plan allowing more than four years to graduate.
Completer	A student who passes a GED test through a program administered by the school district and/or a student who takes more than the standard number of years (4) to receive a high school diploma.
No Show	A student who was enrolled in school the previous year, but as of the fall collection date, the student has not shown up to school. The student should be counted as a dropout the following year if a transfer status is not confirmed.
Dropout	A student who was enrolled the previous year but quit school at some point and is not currently enrolled.
Transfer	A student who exits from one school to enroll in another.
Home School	A student who has left the public school system to be taught at home and is registered with the county superintendent as a home schooler.

Source: Compiled by the Legislative Audit Division from agency records.

In defining student status, the handbook provides a different example and perspective to illustrate each definition. According to the National Center for Educational Accountability (NCEA), one of ten essential elements in collecting quality data is having accurate student level dropout and graduate data. In an effort to do this, NCEA suggests establishing a statewide coding system for the various reasons students leave a school and clear guidelines on how those codes should be applied. OPI has established such a system for Montana.

School Visits

To determine if these guidelines are followed, we visited 14 schools around the state to observe and interview school personnel on how they use the OPI handbook and apply status coding procedures. The

schools were chosen based on their average enrollment and dropout rate. Averages for both enrollment and dropout rates were calculated using three years of data (2001-2004). We divided Montana high schools into four groups – high, medium, low and zero percent dropout rates. Within the four groups, we chose schools based on enrollment size and dropout rate. A small, medium and large enrollment school was chosen within each of the four dropout groups.

Data Verification

We compared OPI data to documentation maintained by the schools on the number of reported student graduates, dropouts and completers. In all 14 schools visited, 100 percent of the data reviewed at the schools was consistent to that reported by OPI. Our review confirmed that the data in school information systems matched data input into OPI's system.

Examples of Inconsistency

We found inconsistencies in the manner in which status codes were applied to students. During our visits we inquired how a student would be coded in different scenarios; what constitutes a graduate, completer, and dropout. The responses we received indicated schools have different interpretations on how and when to apply OPI defined status codes. In 9 out of 14 schools visited, we found inconsistencies in the application of student status codes. For example, some schools categorize a student passing a General Education Development (GED) test as a completer, regardless of the administering entity. OPI guidelines, in accordance with NCLB, require students to pass a GED test through a program administered by the school district in order to be coded as a completer. In most Montana districts, this is usually done through an alternative school within the district. A student who passes a GED test through another entity other than the school district should be coded a dropout, according to OPI guidelines.

Another example is a student that attends Job Corps. Depending on the school, this type of student is coded in various ways; dropout, graduate, and completer. Job Corps is an education and vocational training program administered by the U.S. Department of Labor that serves young people ages 16 through 24. At Job Corps, students enroll to learn a trade, earn a high school diploma/GED, and get help finding a job. OPI's guidelines are unclear in defining a status code for Job Corps students or when those students should be coded as a dropout versus a completer.

Another variation found in schools was how a "no show" student is coded. A "no show" student is one who was enrolled either from eighth grade or in the previous year; however, when school begins in the fall, this student does not show up. Some schools are reporting this student as a dropout in the Annual Data Collection (ADC) the same year, while others are waiting until the following school year to report, in hopes of receiving more information on whether the student is a dropout or transfer. OPI guidelines allow a school to wait until the following year to report a "no show." Our visits also found a school that only reports dropouts as those students who drop out of the twelfth grade, rather than grades 9-12, as required. Although ethnicity has no effect on dropout or graduation numbers, we found a school that coded students as White, non-Hispanic, even when that was not the student's ethnicity.

Guidelines Not Fully Utilized

Although OPI's dropout and graduate handbook provides detailed guidelines for student status codes, schools are using the guidelines on a limited basis. As part of our audit work, we interviewed officials responsible for tracking student status and reporting it to OPI. The staff person responsible for these duties varied by school and included either the secretary, principal, or data specialist. During interviews we asked if these officials found the handbook useful. Three of the 14 schools we visited found OPI guidelines for graduates and dropouts to be very useful. Eight schools use the guidelines to some degree and the other three do not use the guidelines at all. Therefore, a majority (11 of 14) of the schools are using the guidelines on a limited basis or not at all.

A Quality Assurance System Needed

NCEA suggests, in addition to establishing a statewide coding system for student status, it is important to provide training on how those codes should be applied. They also recommend each state have a system for occasionally spot-checking the accuracy of data in cases that are not flagged by statistical checks. Currently, OPI has not developed this level of quality assurance. For example, OPI does not provide on-site technical assistance for Montana schools to assist applicable school personnel in interpreting coding requirements or communicating guideline changes/updates.

Conclusion

OPI's Montana High School Completer and Dropout Data Collection Handbook is an effort to create consistent and accurate data among schools. The handbook provides clear, detailed guidelines. However, when establishing policy (handbook) the issuing entity has a responsibility to ensure it is communicated and followed by the intended recipients (schools). Additional assurance could be provided through OPI staff conducting on-site audits of status code application, as well as providing technical assistance. Off-site assurances could include building on existing statistical checks in the database, as well as randomly calling to verify a student who has recently changed status.

Recommendation #1

We recommend the Office of Public Instruction establish a quality assurance system that includes:

- A. On-site technical assistance training on status code procedures and requirements.
- B. Random verification of student status coding and data submitted.

Documentation Needed for District Approved GEDs and Home School Students There are some limitations to OPI guidelines. OPI guidelines do not require verification of home school students and GED test recipients from the district. Although OPI's handbook states a home-schooled student or a GED test recipient within the district is not a dropout, audit work showed variation on the level of confirmation schools require for a student in these categories.

Home School Students

Home school students in Montana are required to register with the County Superintendent of Schools. Some of our sample schools

Chapter II - OPI Guidelines

verify the student's registration with the County Superintendent while other schools do not. OPI guidelines do not require schools to verify home school registration. During interviews with school personnel, concerns of schools misclassifying a student as a homeschooler arose. School personnel stated some other schools may be coding a dropout as a home school student in order to not negatively affect their school's graduation and dropout rates. By not accurately coding a dropout, schools inflate their graduation rate and decrease their dropout rate.

District Approved GED Recipients

The level of confirmation varies on students who pass the GED test as well. As mentioned earlier, we found schools did not confirm whether a GED test was taken through a district-administered program. Audit work found some schools categorize a student completing a GED, even if outside the district (not district administered), as a completer. In one example a student passed a GED test through a private program after dropping out of school. School personnel became aware of the student's GED achievement, and therefore coded the student's status as a completer instead of a dropout. OPI requires students to receive a GED from a district-administered program, which is usually an alternative school within the district, in order to be counted as a completer. This requirement is consistent with NCLB law.

In order for data to be accurate, OPI must be able to distinguish between students who drop out, get a GED, or who transfer to another school or home school situation. Montana school districts already require documentation of transcripts for students transferring among public schools; the same standard could apply to documentation of home schooling or the entity issuing a GED test to a student.

Recommendation #2

We recommend OPI incorporate into its guidelines that schools verify and document home school registration and GED test information.

Chapter III - OPI's Plan For Improving Data Collection and Accuracy

Initial Planning

The Office of Public Information began exploring the creation of a comprehensive educational reporting system in 2003. The goal was to develop an infrastructure for the educational community to gather school data via the Internet, manage the secure storage of the data, and make the data accessible to decision makers throughout the educational community. In 2004, OPI contracted with an independent consultant to survey schools on the data currently collected and the systems they use to manage the data, as well as write a concept and implementation plan for a student information system.

One important finding of the consultant's survey was the majority of respondent districts were more than ready to see OPI move forward and initiate data improvements. Many districts indicated they were already collecting student level data and could provide such data to OPI in many of the areas surveyed. In the concept and implementation plan, the consultant emphasized the need for OPI to provide leadership, coordination and support for a statewide student information system. The plan states a comprehensive reporting system should be the primary source of educational information. The consultant's work provided OPI with the feedback necessary to move forward on implementing the student information system.

Resources Appropriated

In 2005, OPI requested for funds to implement a student information system. The legislature appropriated \$2.8 million for the purpose of a new statewide K-12 system and approved four full-time staff. The request for proposal (RFP) for the system went out with a cost estimate of \$2 million, which leaves \$800,000 for the new positions over the 2007 biennium. Positions being hired for this project are: database administrator, project manager, student records manager, and data resource administrator.

Current Stage of Implementation

Most recently, OPI assembled an evaluation team which was comprised of eight OPI staff members, as well as two school staff members with knowledge about information technology and special

Chapter III - OPI's Plan For Improving Data Collection and Accuracy

education. They met on regular occasions, discussing and conducting research on similar systems for the creation and implementation of the new system. Research consisted of important components to consider such as:

- An audit system to assess data quality, validity, and reliability.
- ▶ A unique identifier for each student in the system.
- ▶ Interoperability.
- Privacy protection.

The New System

OPI is currently in the process of contracting with a vendor to develop the new system. According to planning documents, the RFP, and interviews with OPI personnel, the new system will have three main components:

- Student information; including student identifier and data elements,
- ▶ Special education data,
- ▶ An electronic data warehouse.

The student identification component will provide a unique identifier for each student entering the Montana public education system. This number will remain the student's identifier until he/she exits the system. As well, it will provide information on each student such as gender, grade, etc. Currently, there is no way to track students throughout the public education system because OPI collects aggregate numbers, not information to identify or track an individual student through the education system.

The second main component will provide information on the statewide system for special education students. All documents pertinent to the student will be accessed electronically through the student's identification number.

The third component of the new system will be an electronic data warehouse where all student/school level data will be stored annually. This data will be updated periodically as student

Chapter III - OPI's Plan For Improving Data Collection and Accuracy

information changes. Information can be accessed to conduct trend analysis by district or state personnel.

OPI will begin initial implementation in the fall of 2006 by assigning a student identifier to each student enrolled in public schools, K-12. OPI will still collect data on the number of graduates and dropouts, but with the student identification component it will be possible to roll up the data and look at overall numbers or drill down to see the status of one particular student.

Majority of States Have a Statewide Information Management System

A student identifier and data warehouse system similar to what Montana is implementing exists in over half of the states. Thirty-two states and the District of Columbia already have such a system in place. Sixteen states, including Montana are currently developing a system. Only two states have not yet looked at developing such a system.

The National Center for Educational Accountability (NCEA) recommends states institute a longitudinal data system which matches individual student records over time, from pre-kindergarten through twelfth grade and into post-secondary education. NCEA states,

"That when states collect the most relevant data and are able to examine longitudinally, they can answer the questions that are at the core of educational effectiveness. States are spending hundreds of millions of dollars to improve student achievement. But without quality data, they are essentially flying blind."

Other states have various components to their statewide student information management systems; for example, teacher information, fiscal or budget information, and post-secondary information.

Although OPI documents and interviews suggest a desire for these additional components, at this point, there is only funding allocated to implement the three components previously mentioned.

Chapter III - OPI's Plan For Improving Data Collection and Accuracy

Impacts of the New System

The most obvious benefit from the graduate and dropout perspective is the ability to track or follow students within Montana public schools. Currently, one student could be coded as a dropout from two schools in the same year. If a student attends two schools and drops from both within one year, duplications in student coding occur. If a student transfers to another school, but the receiving school never requests transcripts, the student may be coded as a dropout rather than a transfer. The new system will help address these problems. No longer will OPI's data be just disaggregated numbers; with the new system there will be a higher level of detail available. For example, stakeholders will be able to correlate certain factors such as the number of dropouts to students in advanced placement or special education classes statewide. Because there will be a data warehouse component to the system, longitudinal data or trend analysis will be possible. In addition, stakeholders believe a longitudinal rate for dropouts would be a better representation of the dropout rate for Montana.

Human Element Still Exists

The implementation of the new student information system will improve OPI's current data collection and compilation system in various ways, but individuals will still decide on which status code to enter for a student. If individuals are not using student status codes consistently among schools, the new student information system will not provide comparable data. The importance of this was stressed in Chapter II and addressed in Recommendation 1.

The issue was also raised in various interviews with stakeholders. The subject of consistent, accurate data came up repeatedly. Stakeholders do not believe all schools are defining a dropout in the same manner. Our school visits reaffirm this statement. Consistency in the application of student status codes is essential to assure the validity and accuracy of the data.

Conclusion: The statewide student information system will assist in providing quality, uniform data on graduates and dropouts. However, OPI's data collection system will still largely depend on the consistent application of student status codes by school personnel.

Chapter IV – Use of Data

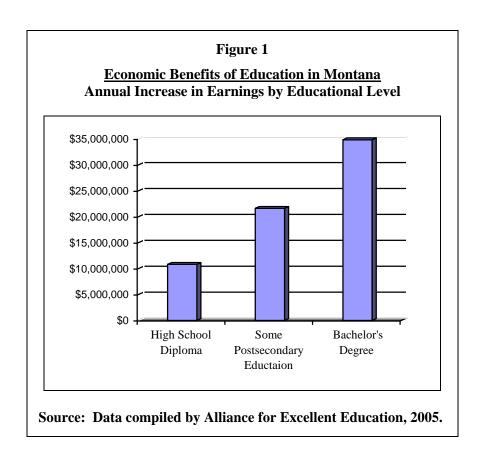
Data is Integral to Decision-Making

Educational stakeholders in Montana agree graduate and dropout data is an integral piece of information, specifically at the state level. They consider it to be an important tool in efficient decision-making and public reporting. Educational stakeholders believe the public has a right to know the number of students graduating and have access to that data. During audit work, one stakeholder discussed the importance of looking at the bigger picture and the economic impacts of education. The importance of paying attention to students who are at risk of dropping out was highlighted. The number of individuals in prison and on social welfare without a degree is high. The expense on the back end of "at-risk" kids is much more than if efforts would focus on the problem while they are in school.

National Use of Data for Economic Analysis

The National Center for Education Statistics, in conjunction with the U.S. Department of Commerce, confirms the importance of tracking these areas, by stating, "Dropouts from high school are more likely to be unemployed and earn less when they are employed than those who complete high school." Research presented to the New Mexico Business Roundtable for Educational Excellence by the Office of Education Accountability estimates a lifetime loss of tax revenues, from males ages 25-34 years who did not complete high school, to be approximately \$944 billion, with cost increases to public welfare and crime at \$24 billion.

Montana decision-makers could use similar approaches to look at the effects of dropouts on Montana's economy. The following chart depicts one method of calculating the economic impacts of a high school diploma in Montana.



The increased earnings in the above chart were calculated using graduate rate data from the National Center for Education Statistics and the Manhattan Institute for Policy Research and a formula from the U.S. Department of Commerce. The availability of better graduate and dropout data provides a better means to analyze economic costs and benefits of education.

Stakeholders' Use of Data

At the local level, schools use graduate and dropout data to assess the performance of their individual school and district. Administrators review the data collected on the number of graduates and dropouts in order to discern the bigger picture of the school's performance. One educational stakeholder stated, "dropout and graduate data is just one indicator of school performance, but a foundational one so the district and state know where to put their resources." A superintendent of a large district in the state developed dropout prevention programs and started an alternative high school because the data for his district showed high numbers of dropouts. Because

graduation and dropout rates are performance indicators for schools, stakeholders indicated they would like to see a more consistent depiction of the rates.

Accessibility and Use of Data

The OPI Division of Measurement and Accountability at the Office of Public Instruction collects, compiles, and analyzes graduate and dropout data, shares data with various programs within OPI and presents annually to the Board of Public Education. Upon request, the division also provides data to educational stakeholders in the state and researchers from around the nation. Some annual reports are posted to OPI's website, as well. Audit work found no formal plan for educational stakeholders and the public to access and analyze data stored in the new system. The RFP does request the system have an interactive querying tool to enable data driven decision-making by state-level education staff and policy makers.

In the OPI concept and implementation plan for the new statewide student information system the term "information democracy" is used. Information democracy means everyone (with appropriate security) can access data in the data warehouse component of the system (i.e., it is an open system). Different stakeholders in the educational community need different types of access to data. For example, members of the general public often need summary or "canned reports" from the data warehouse, whereas some researchers or legislators may need to conduct a series of 'ad hoc' queries. In such a system, less experienced data users must have reports regularly pushed to them via the Internet and those groups that have the capability for greater analysis may have permission to pull more selective data at any time from the data warehouse.

Section 10.55.603, ARM, states the assessment of educational programs and their effectiveness should be examined through assessment results as well as graduate and dropout numbers. In order to examine graduate and dropout numbers for program effectiveness, statewide data needs to be accessible. A comprehensive system that provides various means to access data would be more effective.

Conclusion

OPI is working to implement a \$2 million statewide student information system. The implementation of a new information system would be an optimal time to establish a plan for data accessibility and dissemination. An accessibility and distribution plan would enable the state to effectively utilize the \$2 million information system to its full potential. The implementation of the new system is the first step to providing quality data to educational stakeholders. However, this data should be used and analyzed. A plan for data distribution and accessibility is the next step in fully utilizing the student information management system.

Recommendation #3

We recommend OPI establish a plan for accessing and disseminating the data in the new student information system.

School	3 Year Average Dropout Rate
Absarokee High School	0.53%
Alberton High School	1.33%
Anaconda High School	3.62%
Arlee High School	2.64%
Augusta High School	0.00%
Bainville High School	0.00%
Baker High School	0.37%
Beaverhead Co High School	2.63%
Belfry High School	3.23%
Belgrade High School	4.28%
Belt High School	1.33%
Big Sandy High School	1.33%
Big Sky High School	3.16%
Bigfork High School	2.56%
Billings Sr High School	4.67%
Billings West High School	3.02%
Blgs Central Catholic H S	0.40%
Blue Sky High School	0.00%
Box Elder High School	12.32%
Bozeman High School	3.22%
Brady High School	3.09%
Bridger High School	1.00%
Broadview High School	0.74%
Broadwater High School	3.00%
Brockton High School	3.35%
Browning High School	7.25%
Butte Central High School	0.22%
Butte High School	5.58%
C M Russell High School	2.18%
Capital High School	3.32%
Carter County High School	0.99%
Cascade High School	3.24%
Centerville High School	1.79%
Charlo High School	2.54%
Chester High School	1.12%
Chinook High School	2.77%
Choteau High School	0.40%
Circle High School	1.19%
Colstrip High School	2.09%
Columbia Falls High Schl	4.29%

School	3 Year Average Dropout Rate
Columbus High School	1.70%
Conrad High School	3.14%
Corvallis High School	3.98%
Culbertson High School	0.47%
Custer Co District High	4.15%
Custer High School	1.10%
Cut Bank High School	4.01%
Darby High School	5.50%
Dawson High School	2.13%
Denton High School	1.24%
Dodson High School	0.00%
Drummond High School	0.00%
Dutton High School	0.00%
Eagle High School	0.00%
Ennis High School	0.00%
Fairfield High School	0.00%
Fairview High School	3.45%
Fergus High School	3.03%
Flathead High School	7.47%
Flaxville High School	0.00%
Florence-Carlton HS	0.85%
Forsyth High School	3.25%
Fort Benton High School	1.16%
Frazer High School	7.52%
Frenchtown High School	2.84%
Froid High School	0.00%
Fromberg High School	2.33%
Gardiner High School	2.13%
Garfield Co Dist HS	0.96%
Geraldine High School	0.75%
Geyser High School	0.00%
Glasgow High School	2.58%
Granite High School	4.33%
Grass Range High School	0.64%
Great Falls Cent Cath HS	0.66%
Great Falls High School	3.10%
Hamilton High School	3.42%
Hardin High School	5.74%
Harlem High School	6.10%
Harlowton High School	1.25%
Harrison High School	0.00%
Havre High School	3.95%

School	3 Year Average Dropout Rate
Hays-Lodge Pole High Sch	11.56%
Heart Butte High School	12.68%
Helena High School	5.43%
Hellgate High School	5.10%
Highwood High School	0.82%
Hinsdale High School	0.00%
Hobson High School	0.00%
Hot Springs High School	0.86%
Huntley Project High Schl	0.88%
Hysham High School	1.27%
Jefferson High School	2.44%
Joliet High School	1.12%
Joplin-Inverness HS	0.00%
Judith Gap High School	0.00%
Kalispell Jr High School 9th	1.62%
K-G High School	0.00%
Lambert High School	0.00%
Lame Deer High School	10.88%
Laurel High School	3.57%
Lavina High School	0.00%
Libby High School	4.21%
Lima High School	0.00%
Lincoln Co High School	2.58%
Lincoln High School	3.33%
Lodge Grass High School	18.71%
Loyola-Sacred Heart H S	0.16%
Lustre Christian H S	0.00%
Malta High School	0.35%
Manhattan Christian H S	0.00%
Manhattan High School	0.96%
Medicine Lake High School	0.00%
Melstone High School	1.19%
Moore High School	1.05%
Mount Ellis Academy High	0.44%
MT Sch For Deaf & Blnd HS	0.00%
Nashua High School	0.00%
Northern Cheyenne Trib HS	8.46%
Noxon High School	1.67%
Opheim High School	0.00%
Outlook High School	0.00%
Park City High School	0.00%
Park High School	2.54%

School	3 Year Averag
School	Dropout Rate
Peerless High School	0.00%
Pine Hills School HS	0.00%
Plains High School	2.56%
Plenty Coups High School	11.06%
Plentywood High School	2.12%
Plevna High School	0.00%
Polson High School	6.93%
Poplar High School	10.17%
Powder River Co Dist High	0.23%
Powell County High School	6.86%
Power High School	2.50%
Rapelje High School	0.00%
Red Lodge High School	1.53%
Reedpoint High School	0.00%
Richey High School	0.00%
Riverside High School	0.00%
Roberts High School	0.00%
Rocky Boy High School	12.18%
Ronan High School	8.38%
Rosebud High School	1.15%
Roundup High School	4.11%
Roy High School	0.00%
Ryegate High School	2.78%
Saco High School	1.10%
Savage High School	1.56%
Scobey High School	0.30%
Seeley-Swan High School	2.56%
Sentinel High School	3.28%
Shelby High School	7.55%
Shepherd High School	3.19%
Sheridan High School	1.10%
Shields Valley High Schl	2.47%
Sidney High School	2.57%
Simms High School	3.53%
Skyview High School	1.96%
St Ignatius High School	4.94%
St Labre High School	2.52%
St Regis High School	1.00%
Stanford High School	1.19%
Stevensville High School	3.93%
Sunburst High School	1.49%
Superior High School	1.46%
T	2,0

School	3 Year Average Dropout Rate
Sweet Grass Co High Schl	2.38%
Terry High School	1.56%
Thompson Falls High Schl	2.14%
Three Forks High School	1.43%
Troy High School	1.27%
Turner High School	1.10%
Twin Bridges High School	0.46%
Two Eagle River High Schl	8.26%
Valier High School	0.44%
Victor High School	3.24%
West Yellowstone HS	6.82%
Westby High School	0.00%
White Sulphur Springs HS	3.80%
Whitefish High School	3.05%
Whitehall High School	3.39%
Whitewater High School	0.00%
Wibaux High School	0.99%
Willow Creek High School	0.00%
Winifred High School	0.72%
Winnett High School	0.00%
Wolf Point High School	5.68%

Agency Response



Montana Office of Public Instruction

Linda McCulloch State Superintendent

June 1, 2006

Scott A. Seacat Legislative Auditor Legislative Audit Division Room 135, State Capitol Building P.O. Box 201705 Helena, MT 59620-1705 JUN 0 5 2006
LEGISLATIVE AUDIT DIV.

Dear Mr. Seacat:

The purpose of this letter is to provide comments by the Office of Public Instruction (OPI) concerning the Legislative Audit Division's performance audit of the collection and use of dropout and graduate data. We thank Angie Grove and Bridget Butler for their hard work and professionalism during this audit. The following is our response to the recommendations in the performance audit. As you know, the Office of Public Instruction is currently implementing a statewide student information system with funding provided by the 2005 legislature. Many of our comments reflect the plans that OPI has made for working with a vendor to implement the student information system.

Recommendation #1

We recommend the Office of Public Instruction establish a quality assurance system that includes:

A. On-site technical assistance on status code procedures and requirements.

OPI Response: We concur. OPI understands the importance of providing high quality, on going training to school personnel. The new student information system includes a comprehensive training component on the use of the student information system, including the management of student enrollment status codes. OPI will use a standard set of codes and instruct school personnel on the appropriate use of these codes. OPI's contract with the software vendor calls for training of school personnel to be provided for at least two days in five regions in Montana. Given that school districts will be expected to maintain these codes on a regular basis (rather than for the purpose of an annual report), the more frequent usage should improve the quality of the data.

Currently, OPI provides regional training each fall to school personnel on reporting non-fiscal data through the Annual Data Collection. At this training, OPI refers districts to the guidance provided in the OPI's *Montana High School Completer and Dropout Data Collection Handbook*.

Page B-3

Attendance at these training sessions is voluntary, and the amount of training time allocated to dropout and graduate reporting is approximately 10 minutes with additional time for follow-up questions.

OPI does not have the financial resources to conduct individual school visits on a regular basis. Due to limited training budgets, travel budgets and staff resources, OPI must provide its technical assistance through regional trainings and electronic formats. In years past, OPI was able to conduct on-site accreditation reviews and provide assistance to districts for curriculum development. If additional funding were provided for on-site school visits, the priority for technical assistance would be in the area of academic program improvements and curriculum development.

B. Random verification of student status coding and data submitted.

OPI Response: We concur. Each June, OPI provides a set of instructions to school district auditors for items to review in the audit process. Currently, auditors are instructed to verify enrollment records. OPI could amend its instructions to auditors to include a review of the enrollment status of students. OPI could also generate a random list of school districts for auditors to conduct a more detailed check of the enrollment status of students.

Under the new student information system, schools will be expected to maintain student enrollment status codes and will receive training on how to do so. OPI will have quality controls in place to ensure that the enrollment status of each student is valid. For example, a student could not be reported as enrolled in one district and as a dropout in another district. In addition, a district cannot report a student as having transferred to another public school district without that student showing up as enrolled in the public school system.

Recommendation #2

We recommend the Office of Public Instruction incorporate into its guidelines that schools verify and document home school registration and GED test information.

OPI Response: We concur with the need to have systems in place to document and verify changes in a student's enrollment status. Beginning in the 2006-2007 school year, each student who is enrolled in a public school district will have an enrollment status. For example, a student could be coded as currently enrolled, transferred, dropped out, completed, not enrolled (but eligible to return), or deceased. As the student's enrollment status changes, the changes will be documented and saved to create a historical record for the student.

When a student transfers from one public school district to another, the request for transcripts comes from the receiving district not from the sending district. In the case of a student transferring to a home school, the request for transcripts would be made by the parent. Under the new system, OPI could design a form that the sending school could ask the parent to sign when the student is withdrawn from the public school. However, there is nothing in state law that would require the parent to sign the form. County superintendents could also play a role in communicating to public school districts when a student has transferred to a home school.

Parents who home school their children are required to notify the county superintendent that the student is attending home school.

GED students who are in a district-sponsored program are considered enrolled in school up until the time they take the GED test. In which case, there is no need for a transcript request because technically the student has not left the school or district. When an enrolled student completes their education by passing a GED test, the enrollment status code will reflect the student's completion status. If the student leaves school without passing the GED test, the student would be considered a dropout.

Recommendation # 3

We recommend that OPI establish a plan for accessing and disseminating the data in the new student information system.

OPI Response: We concur. One of the critical success factors that OPI has identified for data warehouse and student information system is "providing state, school district, school, teacher, parent, and public access to appropriate education data, reports and decision support tools through a flexible, easy-to-use Web interface." The contract with the vendor includes both the creation of standard reports that can be generated on the Web in real time and the generation of ad-hoc reports with custom data elements. One of the significant benefits of the data warehouse is that the policy-makers and the public will have access to data once the data has been verified and that analysis tools will be provided for looking at longitudinal data and trends.

Additional Information

The table below provides additional information to accompany this audit report to show the numbers of students that were reported as standard graduates, non-standard graduates, other completers, and 12th grade dropouts for the 2004-2005 school year.

Class of 2005 (Montana Public and State Funded Schools)		
Student Status	Definition	Student Counts
Standard Graduate	A student who completed the high school graduation requirements of a school district in four years or less, or had a special education plan allowing more than four years to graduate.	10,272
Non-standard Graduate	A student who completed the high school graduation requirements of a school district in more than four years.	63
Other Completer	A student who passes a GED test while enrolled in a program administered by a school	82

	district.	
Dropout (12 th grade)	A student who was enrolled the previous year but quit school at some point and is not currently enrolled. This count includes	455
	students who are working on a GED in a program not administered by a school district.	

Thank you for the opportunity to comment on the performance audit report. We look forward to the support from the Legislature to fully implement our student information system and the recommendations in this report.

Falled

Sincerely,

State Superintendent